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Note

Mallophaga from Three Species of Scoters (Anatidae)

During a survey of the helminth parasites of three species of scoters (Black, *Melanitta nigra* (L.); White-winged, *M. deglandi* (Bonaparte); Surf, *M. perspicillata* (L.)), taken in British Columbia in 1974 and Labrador in 1978, Mallophaga were routinely collected from each host during necropsy. Eighty-two animals (17 Black, 17 White-winged, 48 Surf scoters), all more than one year old, were examined to obtain quantitative data on their feather-louse fauna. Specimens were fixed and stored in 70% alcohol and later mounted in Rubin's solution (Rubin. 1951. Stain Technol. 26: 257–260), or stained with carbol fuchsin and mounted in Canada Balsam. Lapage (1961. Parasitology 51: 1–109; reprinted 1962. Wildl. Dis. (26), 3 microcards (109 pp.)) listed the Mallophaga that had been recovered from scoters, while Emerson (1972. Checklist of the Mallophaga of North America (North of Mexico). Part IV, Bird host list. Deseret Test Center, Dugway, Utah. 216 pp.) gathered together North American records. The classification of the Mallophaga listed herein follows that of Emerson (1972. Checklist of the Mallophaga of North America (North of Mexico) Part I. Suborder Ischnocera, 200 pp.; Part II. Suborder Amblycera, 118 pp. Dugway Proving Ground, Dugway, Utah).

Four genera and six species of Mallophaga were recovered during this study (Black scoters, 3 genera [5 species]; White-winged scoters, 3 genera [4 species]; Surf scoters 4 genera [6 species]). Sixteen (94%) of the Black, 16 (94%) of the White-winged, and 34 (71%) of the Surf scoters were infested. No differences were noted in the burdens (prevalence and intensity of infestation) of scoters from the two sample areas, and years.

The philopterids found were of two morphological types, depending on their preferred position on the host. Short, round-bodied types, not greatly dorsoventrally flattened and with a large head, were located mostly on the head and neck (Clay. 1957. 1st Symposium on Host Specificity among Parasites of Vertebrates. Paul Attinger S.A., Neuchatel. 120–158), e.g. *Anatoecus* spp., while severely dorsoventrally flattened, elongate forms were recovered mostly from the wings and back, e.g. *Anaticola* sp. The amblycerans (*Holomenopon* spp. and *Trinoton* sp.) were found mainly on the breast and wings of the host (see Bourgeois and Threlfall. 1979. Can. J. Zool. 57: 1355–1357; Fitzpatrick and Threlfall. 1977. Can. J. Zool. 55: 1205–1209).

The following annotated list shows, for each mallophagan, the number (%) of each host infested, the number of parasites recovered (male, M;

female, F; nymph, N; total, T), mean number per infested bird, and range of numbers. Male *Anatoecus dentatus* and *A. icterodes* are separated from the *Anatoecus* nymphs and females. At the present time it is impossible to distinguish between the nymphs of the two species, and also the females. Indeed the taxonomic status of these species needs some clarification (Emerson. 1972. Part 1). Several mixed infections were noted (Blacks 4, White-winged 3, Surfs 2) and the absence of a male of one species, or males of both species, does not necessarily mean that all the females present are of one species. *Anatoecus* spp. were found to infest 13 (81%) of the Black scoters, 10 (59%) of the White-winged scoters and 28 (58%) of the Surf scoters.

Ischnocera
Philopteridae

Anaticola crassicornis (Scopoli): *M. nigra*, 17(100), 33M, 39F, 93N, 165T, 10, 1–22; *M. deglandi*, 7(41), 52M, 43F, 129N, 224T, 32, 1–91; *M. perspicillata*, 28(58), 24M, 44F, 64N, 132T, 5, 1–22.

Anatoecus dentatus (Scopoli): *M. nigra*, 4(24), 9M, 9T, 2, 1–5; *M. deglandi*, 4(24), 15M, 15T, 4, 1–8; *M. perspicillata* 4(8), 5M, 5T, 1, 1–2.

Anatoecus icterodes (Nitzsch): *M. nigra*, 7(41), 16M, 16T, 2, 1–4; *M. deglandi*, 4(24), 9M, 9T, 2, 1–4; *M. perspicillata*, 11(23), 17M, 17T, 2, 1–3.

Anatoecus spp.: *M. nigra*, 9(53), 32F, 32N, 64T, 7, 1–9F, 4–16N; *M. deglandi*, 5(29), 16F, 5N, 21T, 4, 1–5F, 1N; *M. perspicillata*, 20(42), 39F, 3N, 42T, 2, 1–7F, 1N.

Amblycera
Menoponidae

Holomenopon leucoxanthum (Burmeister): *M. nigra*, 4(24), 7M, 7F, 14T, 4, 2–7; *M. perspicillata*, 5(10), 1M, 7F, 8T, 2, 1–3.

Holomenopon loomisii (Kellogg): *M. nigra*, 5(29), 4M, 11F, 15T, 3, 1–6; *M. deglandi*, 4(24), 1F, 1N, 6T, 2, 1–2; *M. perspicillata*, 3(6), 5F, 5T, 2, 1–2.

Holomenopon spp.: *M. nigra*, 7(41), 22N, 22T, 3, 1–7; *M. perspicillata*, 4(8), 6N, 6T, 2, 1–2.

Trinoton querquedulae (Linnaeus): *M. perspicillata*, 1(2), 1N, 1T, 1, 1.

The occurrence of *A. icterodes* and *H. loomisii* on the Black scoter, and *A. dentatus*, *A. icterodes*, *H. leucoxanthum* and *H. loomisii* on the Surf scoter constitute new host records.

The only other species of ectoparasite found was *Freyana anatina* (Koch) (Freyanidae), an astigmatid mite, which occurred on 6 (36%) of the Black scoters and 6 (13%) of the Surf scoters.

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